

CLAIMS:

1. A shaft actuator for a transmission comprising a first electromagnetic solenoid for operating a shifting mechanism of the transmission to a first shifted position, and a second
5 electromagnetic solenoid for operating said shifting mechanism to a second shifted position, said shift actuator for a transmission further comprising:
a neutral operation member that is mounted on said shifting mechanism and brings said shifting mechanism to a
10 neutral position lying between said first shifted position and said second shifted position;
a neutral limitation member that can move to a first position where said neutral operation member is permitted to be operated to said first shifted position and to said
15 second shifted position, and can move to a second position where said neutral operation member is brought to said neutral position; and
an electromagnetic solenoid for neutral, which brings said neutral limitation member to said second position.
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2. A shift actuator for a transmission according to claim 1, wherein said neutral limitation member has two operation surfaces formed in a V-shape so as to act on said neutral operation member, and, when brought to said second position,
25 brings said neutral operation member to said neutral position and limits its operation.
3. A shift actuator for a transmission according to claim 1, wherein:
30 said neutral operation member comprises a cam that is mounted on a shifting shaft constituting said shifting mechanism and has a cam surface on the outer periphery thereof; and
said neutral limitation member has a hole with cam

operation surfaces that surround said cam and act on said cam surface and, when brought to said second position, brings said cam to said neutral position and limits its operation.

- 5 4. A shift actuator for a transmission according to claim 1, wherein:

 said neutral operation member comprises a roller support member that is mounted on a shifting shaft constituting said shifting mechanism and protrudes in the
10 radial direction, and a roller that is supported at an end of said roller support member and can rotate on the axis in parallel with the shifting shaft; and

 said neutral limitation member has a hole with roller operation surfaces that surround said roller support member
15 and said roller, and act on said roller and, when brought to said second position, brings said roller to said neutral position and limits its operation.

5. A shift actuator for a transmission according to claim
20 4, wherein provision is made of a guide portion for guiding the movement of said neutral limitation member between said first shifted position and said second shifted position.

6. A shift actuator for a transmission according to claim
25 5, wherein a slide bush made of a material having a small coefficient of friction is fitted to said guide portion.